

SECTION 2 - INSTALLATION AND PROGRAMMING

INTRODUCTION

This section contains instructions for unpacking the phonograph and installing it on location. The phonograph is shipped with all major components in place. Save all tie-down hardware should it become necessary to move the phonograph to another location.

ACCESSORIES BAG ASSEMBLY

Included is a plastic bag containing slip-on terminals connecting accessories, an assortment of spare fuses and spare contacts for connectors. It is recommended that you leave the Service Manual and the accessory bag assembly in the phonograph cabinet in case they are needed.

WARRANTY REGISTRATION CARD

A postage-paid warranty registration card is included with the phonograph. Use this card to register the phonograph for in-warranty repairs.

UNPACKING INSTRUCTIONS

The phonograph is shipped in one carton, ready for installation. The shipping carton should be opened carefully to prevent the phonograph from being damaged or scratched. Inspect the exterior and interior of the cabinet for evidence of damage.

In case of damage, please notify the delivering carrier at once to call and examine the phonograph regardless of the external condition of the boxes. Under U.S. regulations, damage claims must be collected by the consignee. Do not return shipping-damaged merchandise until after your claim has been established. Once your claim is established, damaged merchandise may be returned to the Rowe/AMI distributor for repair. The invoice for repair charges may then be collected from the carrier. Do not destroy packing material or boxes until the carrier's agent has examined them. Unpack the phonograph as follows:

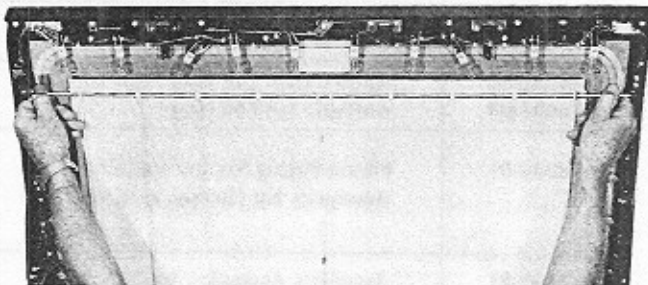
REMOVE PACKING CASE

1. Carefully open packing case. Do not use shipping hooks or other sharp instruments.
2. Remove plastic bag from phonograph cabinet.

OPEN PHONOGRAPH CABINET

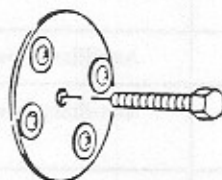
1. Locate red key bag and open lid.
2. Remove shipping brackets, release latches and open doors.

3. Remove tape from title panel. Release title panel by pressing down on spring catch as shown. Swing panel down as shown.

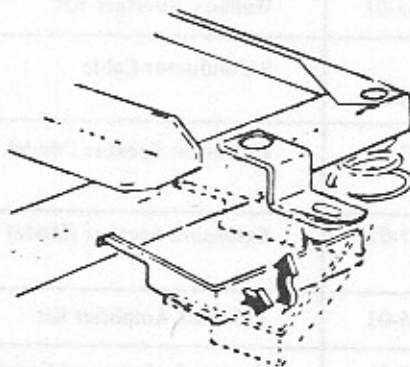


REMOVE RECORD CHANGER MECHANISM TIE-DOWN BOLTS

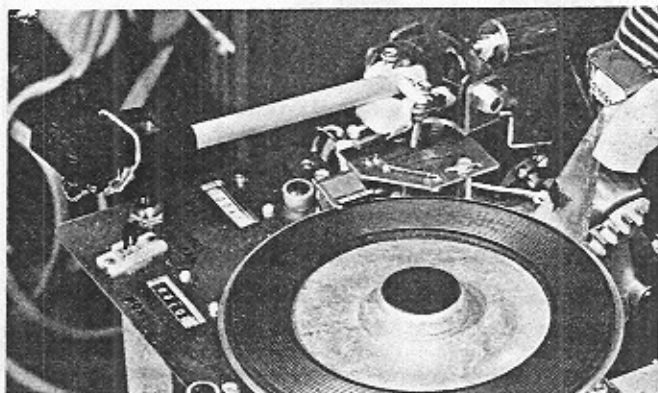
1. Remove shipping bolt from rear of cabinet as shown.



2. Rotate record changer tie-down brackets away from mechanism support frame as shown. Lift up and remove.



3. Remove rubber bands and shipping block from tone arm.



4. Remove turntable hold-down clip. Replace screw.
5. Remove stylus cover from cartridge and stylus.
6. Save shipping hardware for future use.
7. Remove adhesive tape.
8. Check that all plugs are firmly seated in their respective receptacles.

LEVEL PHONOGRAPH

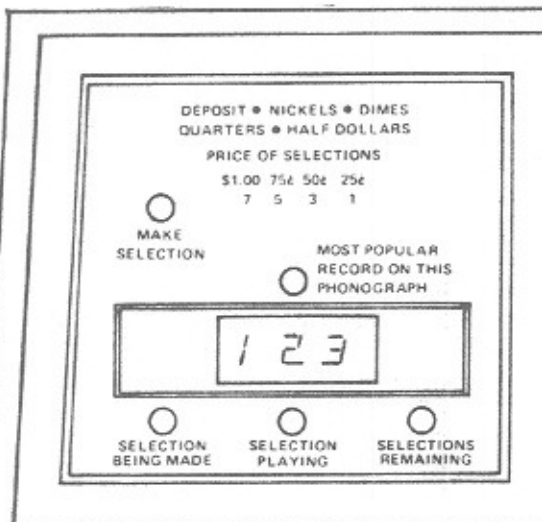
Level the phonograph cabinet left-to-right and front-to-back to ensure proper slug rejector operation. This is done by placing spacers under the caster wheels.

PROGRAMMING

This covers pricing, selection system, credit, playmaker.

PRICING

A new ROWE-AMI exclusive simplified pricing procedure is incorporated in the R-84. All price programming is done on the Pricing Board (6-08878-02). The phonograph is shipped from the factory with prices set at



7 plays for	\$1.00
5 plays for	.75
3 plays for	.50
1 play for	.25

To change pricing open the top door, disconnect the 15 pin connectors. Remove plastic cover. A complete set of price chips is shipped with each phonograph. Select the chips you wish to use and plug them in. Select the matching prices from the universal price card sheet and attach to the price card.

NOTE:

We suggest that unused price chips be kept in the phono in the bag they came in for safekeeping. If chips are lost replacements may be ordered from your Rowe-AMI distributor (part no. 6-08882-01).

The Pricing Board has spaces for six chips. One labelled "Premium Ratio" sets the number of standard plays equal to one premium play. This is used only on phonographs programmed for premium play. The Automix Kit (Part No. 2-66681-06 includes a special price card for such phonographs. If the phonograph is not programmed for premium play this chip may be omitted. If the phonograph is programmed for premium play and this chip is omitted, the premium records will be played free provided there is credit on the machine (premium = zero times standard).

The second chip position labelled "1 play price" sets the price of a single play if less than 25¢. Price chips are provided for single play prices of 5¢, 10¢, 15¢ and 20¢.

The remaining four positions are labelled "Credit Level 1", "Credit Level 2", "Credit Level 3", and "Credit Level 4". In the U.S.A. these levels are factory set at 25¢, 50¢, 75¢, and \$1.00. Select the price chips with numbers of plays desired at each credit level and plug them in.

Blank chips are provided. These represent zeros. If any position is programmed for zero (or if a chip is omitted) that level will be ignored. Reassemble the Pricing Board plastic cover. Test to make certain that the price program works as desired by dropping coins or by using the manual credit button (each push = 25¢). Watch the digital display near the selector keyboard to see how many plays you get at each credit level.

The "Make Selection" lamp will light when there is enough credit to make one or more selections. On Phonos which have the Automix Kit installed, the "Make Premium Selection" lamp will light when there is enough credit to make one or more premium selections. A Premium selection will reduce the "Selections Remaining" by an amount equal to the "Premium Ratio".

OPERATIONAL INFORMATION

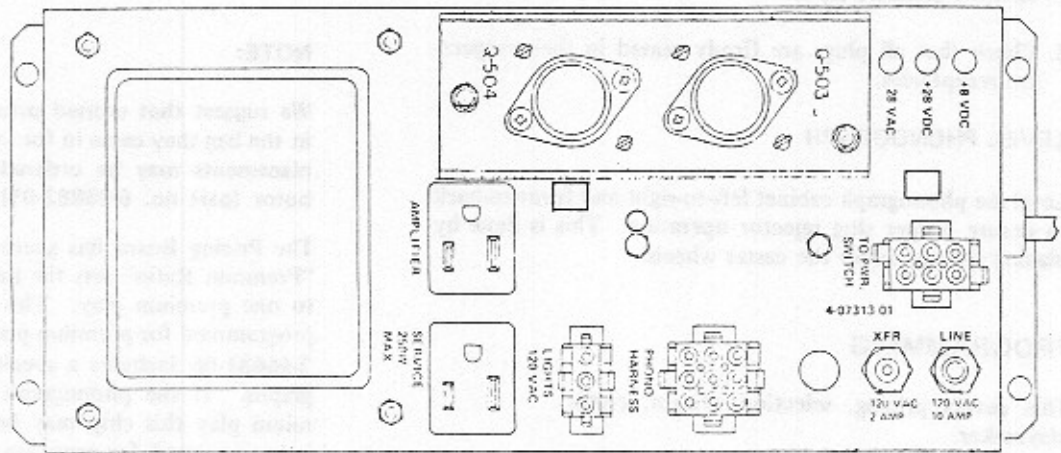
STATUS LAMPS

Red indicator lamps are connected to various strategic points in the phonograph circuit to indicate status of power and signal circuits.

Power Supply

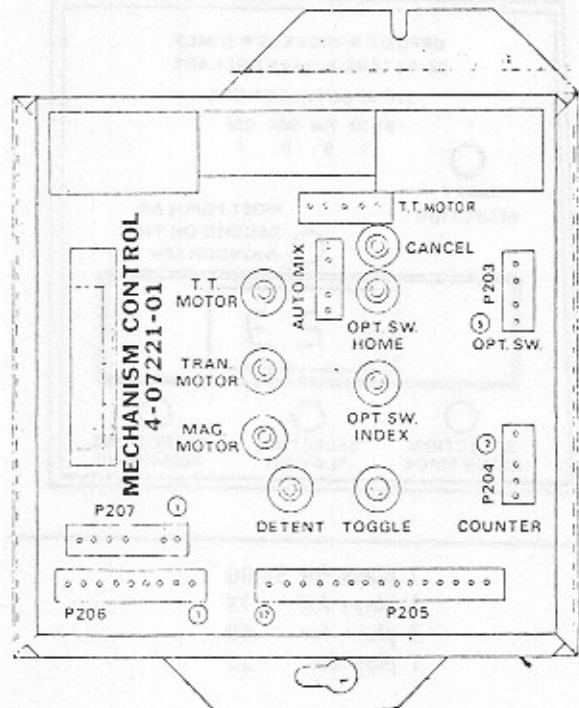
- + 8 Volts DC
- + 28 Volts DC
- 28 Volts AC

Shows presence of respective voltage and implies that there is no short on the lines



Mechanism Control

- | | |
|----------------|---|
| T.T. Motor | Lights when Turn Table motor command is present. Motor should be running |
| Tran Motor | Lights when Transfer command is present. Transfer motor should be running. |
| Mag. Motor | Lights when Magazine Motor command is present - Motor should be running. |
| Detent | Lights when Detent command is present. Detent coil should be actuated. Detent disengaged. |
| Toggle | Lights when Toggle command is present. Toggle coils should be actuated. Both toggle pins moved to left. |
| Opt. Sw. Index | Lights when the Index section of the optical switch sees the tooth space of the magazine drive gear. Flickers when the magazine rotates. |
| Opt Sw. Home | Lights when the Home section of the optical switch sees the hole in the magazine drive gear. Flashes when the magazine record position 99 passes the Transfer position. |
| Cancel | Lights when the cancel signal line is shorted to ground. |



SOUND SYSTEM

ACOUSTICAL COMPENSATION (BASS AND TREBLE CONTROLS)

The pre-amplifier contains treble range and bass boost controls to compensate for room acoustics in various locations. These controls are on the amplifier chassis. The sound level at which the phonograph will be operated and the room furnishings determine the settings of these controls. A room with carpeting and drapery is a soft or highly-absorbent location. A crowded room is also highly-absorbent. These locations require higher sound levels. A room with paneled walls and a bare or tiled floor is a hard non-absorbent location. Bass boost and treble range control settings are listed in Table below. Note that more bass boost is required at low volume levels. The amplifier incorporates circuitry that provides extra bass compensation at low volume levels.

STEREO BALANCE

The stereo balance control is provided to equalize left and right channel amplifier output. This control affects only the top speakers; the low frequency speakers are not affected. This control is factory-adjusted for best performance. If adjustment is required, play a monaural selection and adjust the control for equal sound from each side speaker. When balanced, the sound will seem to come from the center of the phonograph.

AMPLIFIER OPERATION WITH HIGH LINE VOLTAGE

In locations where input line voltage to the phonograph exceeds 125 volts, use the black/red primary lead of the amplifier power transformer instead of the black/yellow lead. This results in a 10% reduction in secondary voltage.

TABLE 2 USE OF AMPLIFIER CONTROLS FOR ACOUSTICAL COMPENSATION

SOUND LEVEL IN ROOM	ROOM ACOUSTICS					
	DEAD OR SOFT HIGHLY ABSORBENT		AVERAGE - MODERATELY ABSORBENT		LIVE OR HARD NON-ABSORBENT	
	SET BASS BOOST CONTROL	SET TREBLE RANGE CONTROL	SET BASS BOOST CONTROL	SET TREBLE RANGE CONTROL	SET BASS BOOST CONTROL	SET TREBLE RANGE CONTROL
LOUD	LOW	MOD/MAX	LOW	MOD/MAX	MOD	LIM
MODERATE	LOW	MAX	MOD	MOD/MAX	MAX	LIM
SOFT	MOD	MAX	MAX	MAX	MAX	MOD

Note: Reduce Treble Range setting as required by record noise (scratch) conditions.

AMPLIFIER OPERATION WITH FM, BACKGROUND MUSIC, PAGING, QUAD

This is an optional, add on accessory. See accessory equipment section for explanation of the Amplifier Accessory Kit.

EXTENSION SPEAKER OPERATION

70-VOLT CONSTANT VOLTAGE EXTENSION SPEAKER OPERATION

Where sound coverage is required in rooms or areas not covered by the phonograph, extension speakers are required. Rowe recommends using the amplifier 70-volt output with 70-volt extension speakers to provide trouble-free operation. Each Rowe/AMI 70-volt speaker includes a matching transformer. The matching transformer has power taps so that power consumed by each speaker in the system can be adjusted. To obtain the total power required for the whole system, simply add the wattage settings of each extension speaker to the wattage setting of the phonograph speaker system. The total wattage must not exceed the rated wattage of the amplifier; otherwise the amplifier will be overloaded. Overloading the amplifier will result in distorted sound and Reduced loudness. It is always advantageous to approximate match the total speaker power to the power rating of the amplifier because in low volume installations, the amplifier can be operated with a reduced volume control setting. This results in greater bass boost and a more pleasing tonal balance.

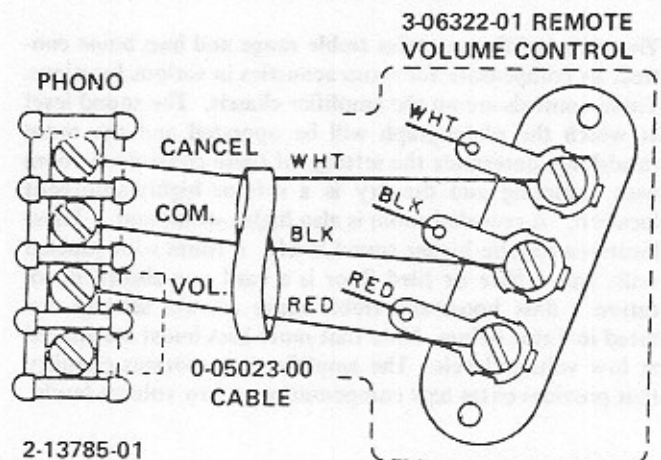
NON-70-VOLT EXTENSION SPEAKER OPERATION

Though less desirable than 70-volt operation, speakers may be connected to impedance taps on the output transformer package. Speaker power ratings and impedance must be considered so that each speaker will get the proper proportion of power. Three requirements must be met:

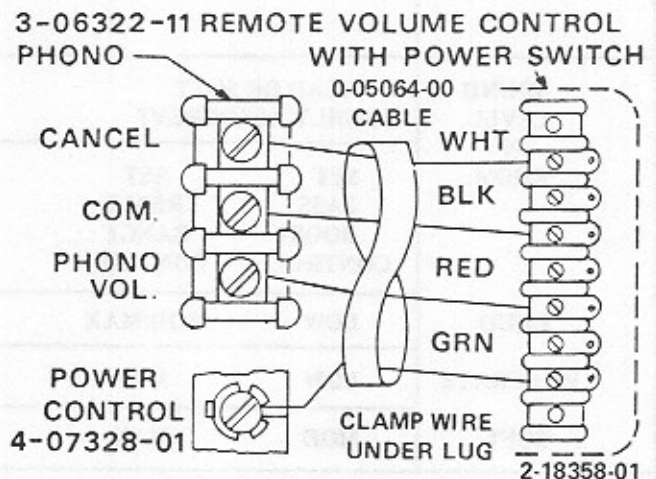
1. The speakers must be wired so that the power consumed by the phonograph and extension speakers does not exceed the amplifier power rating.
2. Each speaker must receive the right amount of audio power to have equal loudness to the other speakers in the system or have higher or lower loudness as required.
3. All speakers must be connected with the proper polarity.

REMOTE VOLUME AND CANCEL CONTROL

Connect the 3-06322-01 remote volume and cancel control to the Phonograph as shown below.



REMOTE VOLUME AND CANCEL CONTROL CONNECTIONS



FULL COVERAGE SOUND SYSTEM CONNECTION CHART

See page 13 for Stereo System Connection Chart. Observe the following notes when making connections:

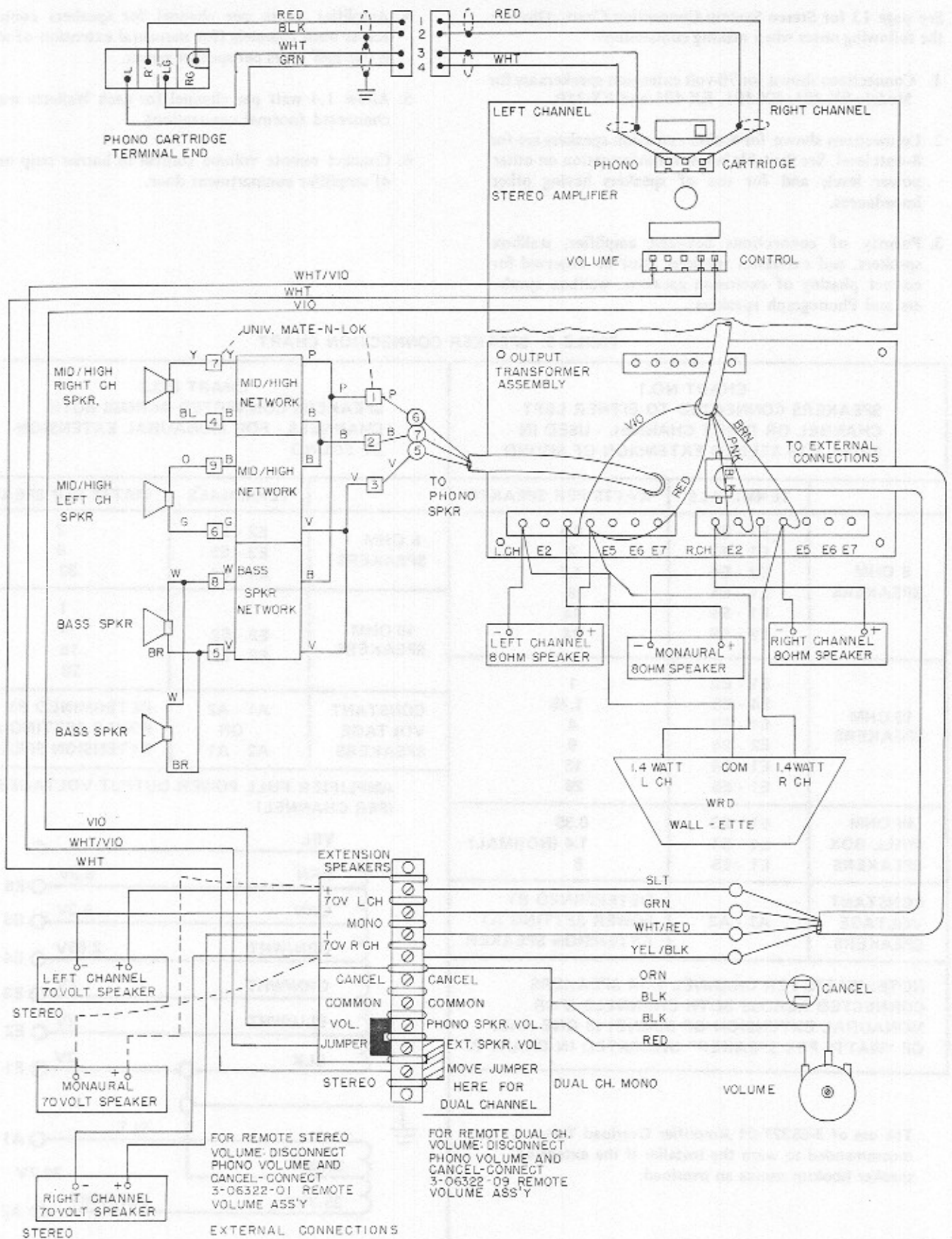
1. Connections shown for 70-volt extension speakers are for Models EX-201, EX-301, EX-401 and EX-350.
2. Connections shown for 8-ohm extension speakers are for 8-watt level. See the table below for information on other power levels and for use of speakers having other impedances.
3. Polarity of connections between amplifier, wallbox speakers, and extension speakers must be observed for correct phasing of extension speakers, wallbox speakers and Phonograph speakers.

4. Amplifier watts per channel for speakers connected across both channels (for monaural extension of sound) is one half watts per speaker power.
5. Allow 1.4 watt per channel for each Walleto wallbox connected (normal connection).
6. Connect remote volume control to barrier strip on top of amplifier compartment door.

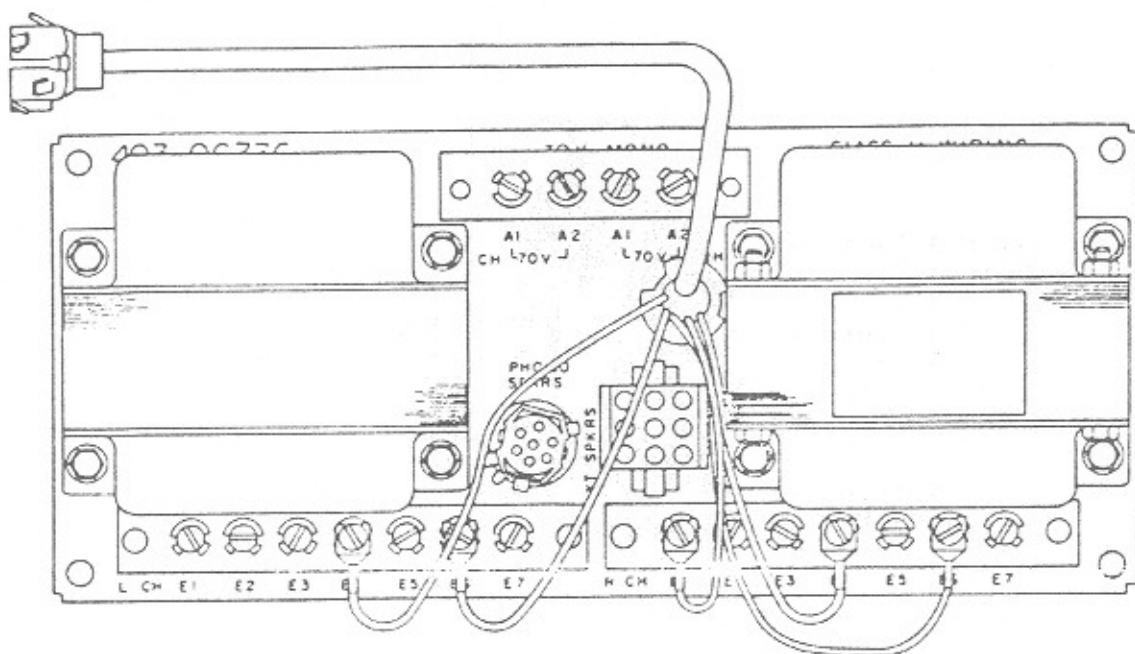
TABLE 3. SPEAKER CONNECTION CHART

CHART NO.1 SPEAKERS CONNECTED TO EITHER LEFT CHANNEL OR RIGHT CHANNEL - USED IN PAIRS FOR STEREO EXTENSION OF SOUND			CHART NO.2 SPEAKERS CONNECTED ACROSS BOTH CHANNELS - FOR MONAURAL EXTENSION OF SOUND		
	TERMINALS	WATTS PER SPEAKER		TERMINALS	WATTS PER SPEAKER
8 OHM SPEAKERS	E1 - E2	0.5	8 OHM SPEAKERS	E2 - E2	2
	E1 - E3	2		E3 - E3	8
	E2 - E4	4.5		E4 - E4	32
	E1 - E4	8	16 OHM SPEAKERS	E2 - E2	1
	E1 - E5	14		E3 - E3	4
	E2 - E6	24			16
16 OHM SPEAKERS	E1 - E2	1		28	
	E4 - E5	1.75	CONSTANT VOLTAGE SPEAKERS	A1 - A2	DETERMINED BY POWER SETTING AT EXTENSION SPEAKER
	E1 - E3	4		A2 - A1	
	E2 - E4	9			
	E1 - E4	16			
E1 - E5	28				
45 OHM WALL BOX SPEAKERS	E1 - E3	0.35	AMPLIFIER FULL POWER OUTPUT VOLTAGES (PER CHANNEL)		
	E1 - E4	1.4 (NORMAL)			
	E1 - E5	5			
CONSTANT VOLTAGE SPEAKERS	A1 - A2	DETERMINED BY POWER SETTING AT EXTENSION SPEAKER			
NOTE: WATTS PER CHANNEL FOR SPEAKERS CONNECTED ACROSS BOTH CHANNELS (FOR MONAURAL EXTENSION OF SOUND) IS ONE HALF OF "WATTS PER SPEAKER" INDICATED IN CHART 2.					

The use of 3-65327-01 Amplifier Overload Tester is recommended to warn the installer if the extension speaker hookup causes an overload.



STEREO SOUND SYSTEM CHART
FOR STEREO PHONOGRAPH, EXTENSION SPEAKERS & WALLETTE SPEAKERS



PHONO SPEAKER POWER LEVEL	PHONO SPEAKERS		POWER PER CHANNEL FOR EXT. SPEAKERS 125 Watt Amplifier
	L.CH. Violet Lead	R.CH. Pink Lead	
64	E6	E6	31
28	E5	E5	49
16	E4	E4	55
4	E3	E3	61
1	E2	E2	62
Black lead to E1 (Common) for all above power levels	CAUTION: Total power rating of load must not exceed 62.5 watts per channel for the 125 watt amplifier		

FIGURE 4. POWER SETTINGS

POWER LEVEL SETTINGS

Power level settings to the phonograph speaker system are adjustable by moving the speaker leads on the output transformer package terminal strip. When setting levels for extension speakers be sure not to exceed the extension speaker rating with the volume control set to maximum position. Speaker damage may result. Change the level as follows:

1. Make a selection. Refer to table 3 and check that speaker power ratings will not be exceeded. Set volume control to maximum position.
2. With a selection playing, refer to figure 4 and change wiring to increase power one level at a time. Do not exceed extension speaker power rating.
3. The desired loudness will usually fall between two adjacent power levels. Choose the higher of the two levels. Control the sound level with the volume control.

This procedure will result in a "normal" frequency response. Some locations may require more bass than is obtained with this procedure and a "max" bass boost setting. Additional bass response can be obtained by using a higher power level setting and lowering the volume control setting accordingly.

WALLETTE SPEAKER POWER LEVELS

Wiring for Wallette speakers is normally connected to terminal E4 for a 1.4 watt power level per speaker. For higher or lower levels, change wiring as shown in table

ALTERNATE POWER LEVELS FOR WALLETTE SPEAKERS

Connections of Red Brown Leads at Terminal Strip	Watts Per Speaker
Terminal E3	0.35
Terminal E4(normal)	1.4
Terminal E5	5

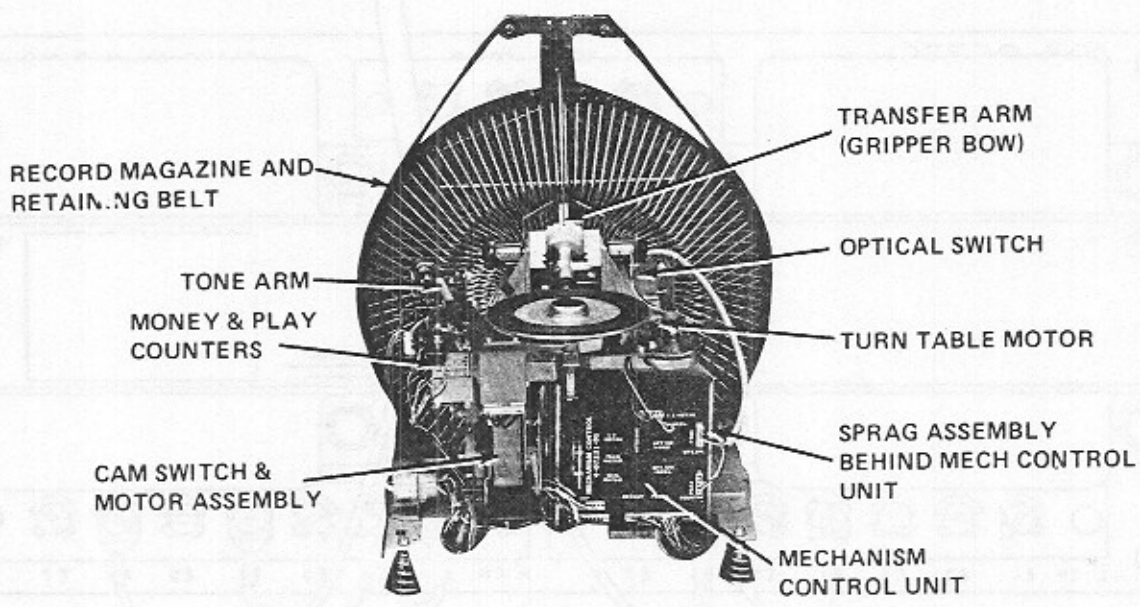


FIGURE 5. MAJOR COMPONENTS

RECORD CHANGER MECHANISM

INTRODUCTION

This section contains preventive maintenance procedures, including cleaning and lubrication instructions. A description of record changer operation is included along with complete adjustment instructions.

Cleaning and lubrication procedures should be performed at regular intervals specified, while adjustments should be made only when necessary.

PREVENTIVE MAINTENANCE

CLEANING

In addition to cleaning the cabinet exterior each time the location is visited, clean the interior every three to six months, as required. Keeping the cabinet interior clean reduces dust, resulting in increased record and component life. Always clean the phonograph cabinet prior to lubrication.

1. Use a vacuum cleaner, if available to remove heavy dust deposits.

WARNING

USE SOLVENTS IN A WELL-VENTILATED AREA ONLY; DO NOT USE SOLVENTS ON ANY TYPE OF PLASTIC PARTS.

2. Use a clean, lint free cloth saturated in denatured alcohol to clean mechanical parts.
3. Clean electrical parts using a clean, dry cloth or camel's hair brush.

FIVE YEAR LUBRICATION

Your phonograph requires lubrication only after five years. To maintain smooth, trouble-free operation, lubricate the record changer mechanism as shown.

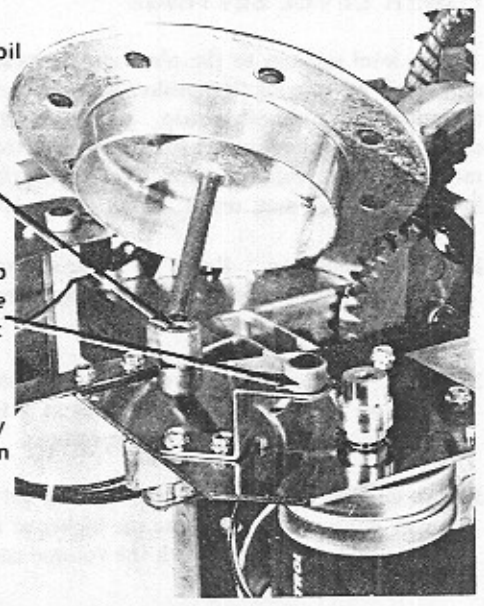
**Do Not Over-Lubricate
Do Not Use Oil or Grease on Solenoid Plungers.**

One drop 3:1 electric motor oil

Lift turntable apply one drop of oil near end of shaft and replace turntable.

Apply one drop of oil to bronze bearing at shaft of turntable motor.

Do Not Get any Oil or Grease on Turntable Belt.



RECORD CHANGER MECHANISM OPERATION

The following paragraphs contain a brief explanation of the operation of the record mechanism. The mechanism holds 100 records and plays selections on command from the selection system. Identification and location of each major component is shown in figure 5. The purpose and description of each component is explained in the following text.

Magazine, Belt and Transfer Arm. The record magazine stores 100 7-inch 33 or 45 rpm records in a circular cage. A seamless belt around the cage keeps records in position. The rollers permit the transfer arm to clear the belt when removing and returning records to the magazine and also maintain belt tension.

Play Counter. The play counter is mounted to the left of the turntable and accumulates the total number of plays on the phonograph.

Money Counter. The Money Counter is mounted on the left side of the turntable and it registers the total money deposited in the phonograph.

Optical Switch. The Optical Switch is in front of the record magazine and straddles the magazine gear. There are two sensors in the switch. One sensor indicates when record "00" is in gripping position. This sensor is called the home sensor. The other sensor counts the number of gear teeth that pass by during scan to tell which record is in gripping position. This sensor is called the index sensor.

Mechanism Control Unit. This solid state switching unit controls the scan, transfer and toggle shift function

Sprag Assembly. This assembly operates the record magazine in position. It is located at the center of the record changer mechanism, immediately in front of the record magazine and below the record transfer arm. The magazine motor rotates the record magazine. The solenoid operated sprag assembly locks the magazine in place.

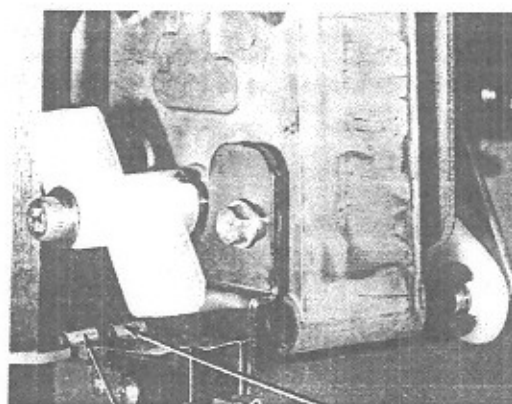
Tone Arm Assembly. The tone arm assembly plays records after they are positioned on the turntable by the record transfer arm. The tone arm contains a stereo cartridge with a diamond stylus that is designed to track at three to four grams pressure. The stylus plugs into the cartridge for easy replacement. Four receptacles in the tone arm assembly mate with a plug to connect the cartridge to the pre-amplifier via 4-conductor shielded cable.

Turntable Motor. The turntable motor is a constant speed 300 RPM (at 60 Hz.) synchronous motor. The turntable is driven with a belt to obtain the proper turntable speed with minimum wow and flutter. For 50 Hz. locations, the belt

must be shifted to the large diameter pulley on the motor shaft and a wiring change must be made on the motor terminal strip.

Because Rowe purchases motors from more than one manufacturer, and because each motor requires slightly different run capacitors, please consult the Rowe Factory Service Dept. for wiring instructions when converting from one line frequency to the other.

Automix. (Optional) Automix operation enables the phonograph to play both 33 and 45 RPM records in any order. Automix components consist of a speed shift coil, a hub shift coil and a trip wire and switch on the turntable hub.



OUTER CAM SWITCH ACTUATED IN RECORD PLAYING POSITION INNER CAM SWITCH ACTUATED IN STANDBY

FIGURE 7. CAM SWITCH AND MOTOR ASSEMBLY COMPONENTS

Cam Switch and Motor Assembly. (See Figure 7). The cam switch and motor assembly consists of the transfer motor, cam, and two cam switches. A nylon cam operates the cam switches.

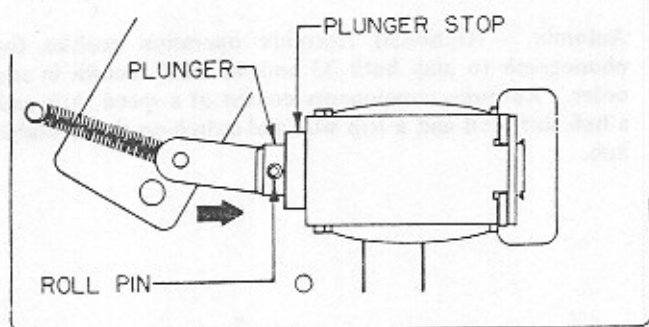
RECORD CHANGER ADJUSTMENTS

SPRAG ASSEMBLY ADJUSTMENTS

The following steps must be used to make sprag assembly adjustments.

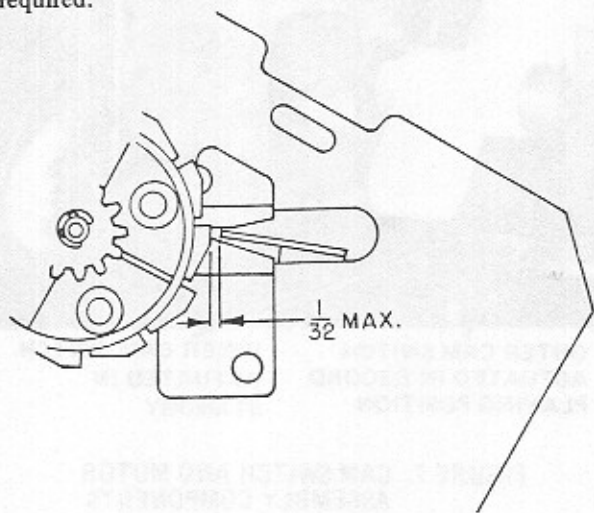
TURN POWER OFF

1. Depress solenoid plunger until the roll pin bottoms on plunger stop. (Actuate by pressing on plunger.)



SPRAG ASSEMBLY (PLUNGER)

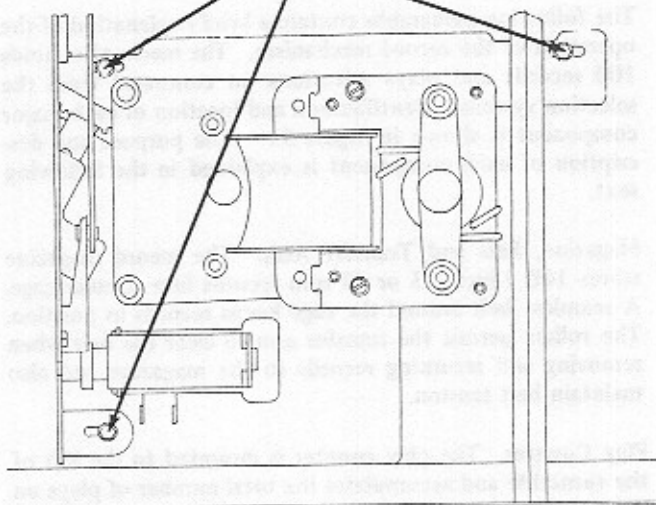
2. Rotate the record magazine and note the clearance between the sprag lever and the sprag wheel located on the backside of the sprag plate assembly. The sprag lever must not touch the sprag wheel and the clearance must not be greater than 1/32 inch. It will be necessary to remove the sprag assembly to make corrections, if required.



SPRAG WHEEL

3. To remove sprag assembly, disconnect wires to the solenoid and motor, remove the three mounting screws and slide the assembly out of the right side of the mechanism.

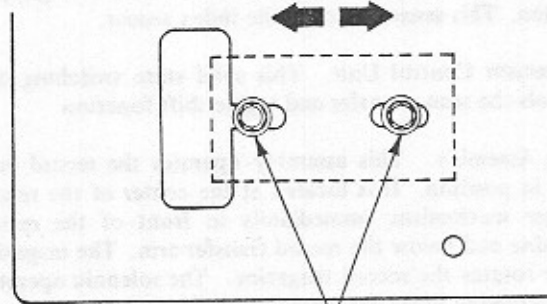
MOUNTING SCREWS



REMOVAL OF SPRAG ASSEMBLY

4. Loosen the solenoid mounting screws and with the roll pin against the plunger stop, position the solenoid so that there is a .015 to .025 inch gap between the sprag lever and the highest point on the sprag wheel.

LATERAL ADJUSTMENT



SOLENOID MOUNTING SCREWS

5. Tighten solenoid mounting screws.
6. Replace sprag assembly in mechanism with (3) mounting screws and replace black and white-blue wires to the solenoid and the yellow and yellow-black wires to the magazine motor.

See Page 18 for instructions for aligning the record magazine and readjusting the optical switch.

II. CAM SWITCH ADJUSTMENTS

If it is necessary to remove the switch cam from the transfer motor, the following procedure must be followed to ensure that the cam is properly located and not 180° out of position.

1. Locate the inner lobe so that it is pointing in the same direction as the crank. Turn cam so that neither cam lobe is on a switch before removing or installing cam. (See Figure 8)

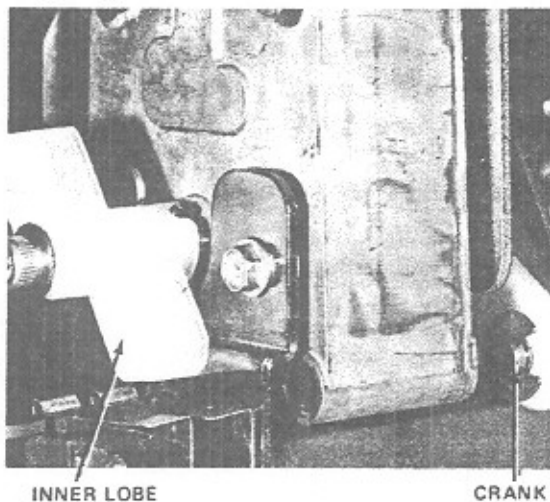
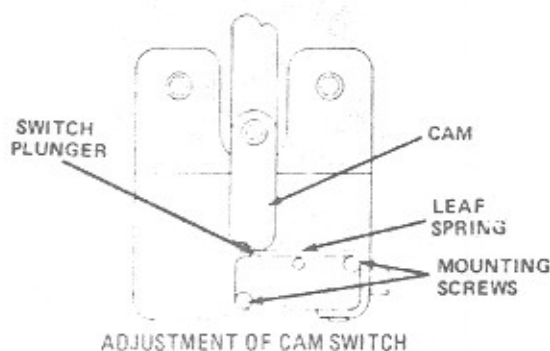


FIGURE 8. CAM SWITCH

CHECK AND ADJUST CAM SWITCH OPERATION

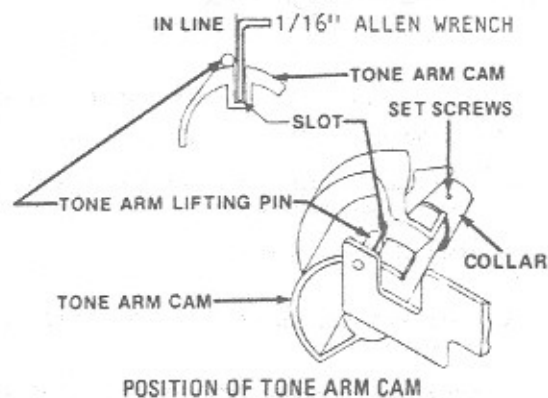
1. Check that the plastic cam leaf spring and switch plunger just touch as shown below.
2. To adjust switches, loosen mounting screw under plunger end and move switch housing as required.



3. Tighten mounting screw and recheck operation.

III. TONE ARM CAM ADJUSTMENTS

1. Lift tone arm and turn it clockwise so the pins are disengaged from the cam.
2. With gripper bow in scan position over magazine (transfer motor crank in maximum down position) loosen one Allen head set screw in collar.
3. Using a 5/32 inch Allen wrench in end of transfer motor shaft, turn motor shaft clockwise until gripper bow is in playing position (transfer motor crank arm in maximum up position).
4. Loosen the other Allen head set screw in collar.
5. Position tone arm cam so that the outside diameter of the tone arm lifting pin is in line with the edge of the slot in the cam, as shown below.



6. Tighten Allen head set screws and replace tone arm.

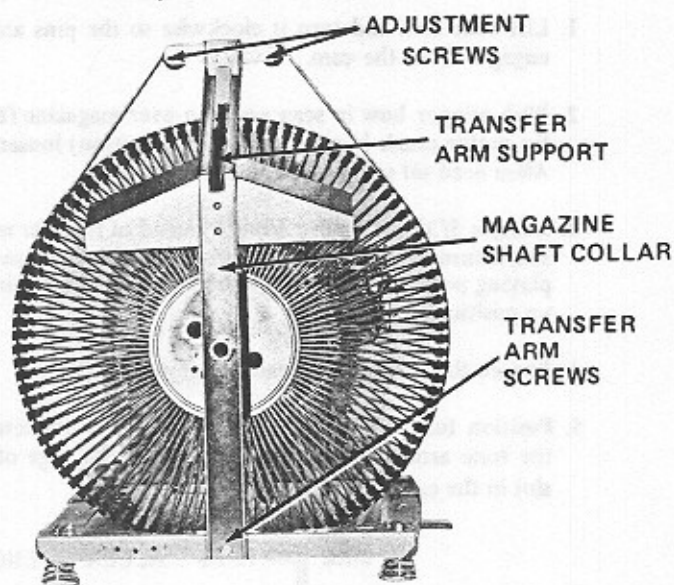
IV. RECORD MAGAZINE TRANSFER ARM SUPPORT ADJUSTMENT

Eliminate Magazine End Play and Center Transfer Arm Support.

1. Loosen set screws in rear Magazine Shaft collar. Push collar on to Magazine Shaft to eliminate end play and tighten screws.
2. Loosen screw that holds transfer arm support to mechanism frame.
3. Adjust transfer arm support so transfer arm is centered in opening.
4. Tighten mechanism frame to transfer arm support screw.

V. MAGAZINE BELT ADJUSTMENT

1. Loosen two adjustment screws shown.

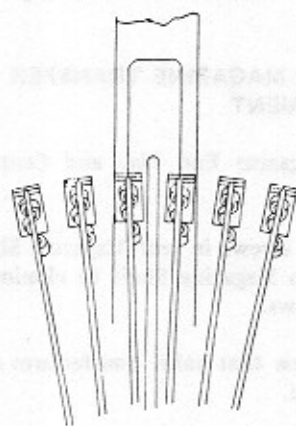


ADJUSTING MAGAZINE BELT

2. Raise bracket to tighten belt around magazine.
3. Check that belt rides evenly in center of belt guides, all the way around the magazine.
4. Tighten 2 adjustment screws.

VI. ALIGNING MAGAZINE STOPPING POSITION WITH TRANSFER ARM

1. Rotate record magazine until selection 99 is at top center. Allow magazine sprag lever to engage and lock magazine in place.

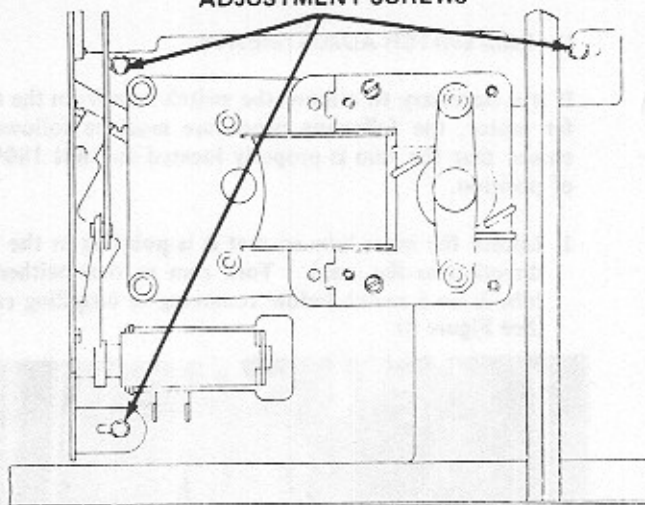


SET AT SELECTION 99

2. Loosen three screws in magazine motor mounting plate.
3. With sprag wheel locked, move magazine until transfer arm is centered between belt guides. (Adjusted screws will be approximately centered in slots).

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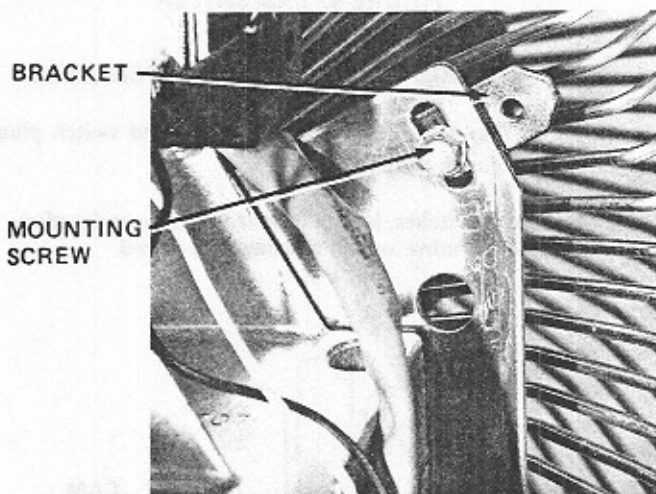
ADJUSTMENT SCREWS



4. Tighten three screws in magazine motor mounting plate securely.
5. Whenever the record magazine is adjusted, the optical switch must be adjusted as shown in the following adjustment procedure.

VII. OPTICAL SWITCH ADJUSTMENTS

1. Release magazine sprag lever from sprag wheel and rotate record magazine until selection 99 is at the top center. Engage the sprag lever locking the magazine in place.
2. Loosen optical switch bracket mounting screw and move bracket to the most clockwise position.



ADJUSTING OPTICAL SWITCH

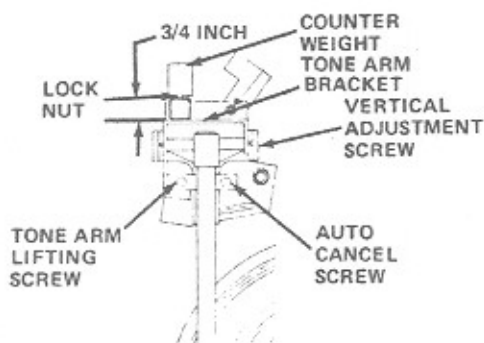
3. Move bracket counterclockwise and watch both the index lamp and the home lamp on mechanism control unit.
4. First both lamps will light. Move bracket past this position until the index lamp goes out.
5. Tighten mounting screws.
6. Rotate record magazine back and forth by hand taking up gear backlash in both directions. The index lamp should stay off, and the home lamp should stay on.

VIII. TONE ARM ADJUSTMENTS

A. Adjust Vertical Pivot.

1. Adjust tone arm pivot screw so that tone arm pivot is loose enough to move free vertically for a distance of two inches above turntable.
2. Check that tone arm moves less than 1/32 inch from side to side at stylus.

B. Set Stylus Force.



VERTICAL PIVOT ADJUSTMENT

1. The distance between the counter weight and the tone arm bracket should be 3/4 inch for 3-1/2 grams stylus force.
2. If distance is not correct loosen lock nut, adjust counter weight and tighten lock nut.

C. Set Stylus Clearance

1. Using a 5/32 inch allen wrench in the end of the transfer motor shaft, turn motor shaft clockwise until gripper bow has placed a record on the turntable. Push down on the tone arm lifting pin (See Figure 9) and continue to turn motor shaft to swing tone arm into the set down position. You will be able to feel the fast rise ramp of the cam contact the tone arm pin. At this point, release the pressure on the lifting pin and adjust the tone arm lifting screw so that the stylus just touches the record.

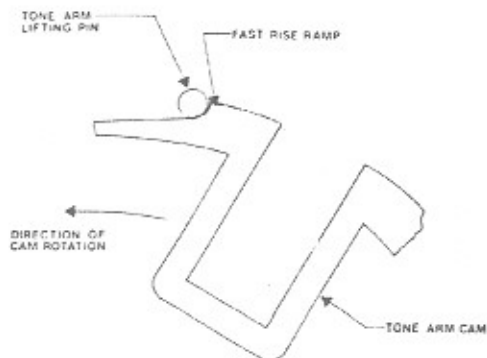
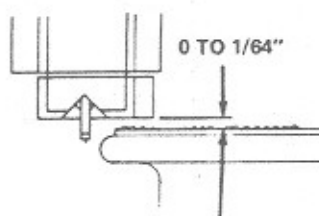


FIGURE 9. SETTING CLEARANCE FOR STYLUS

D. Set Stylus Height.

1. Operate transfer assembly to position tone arm over turntable rim.

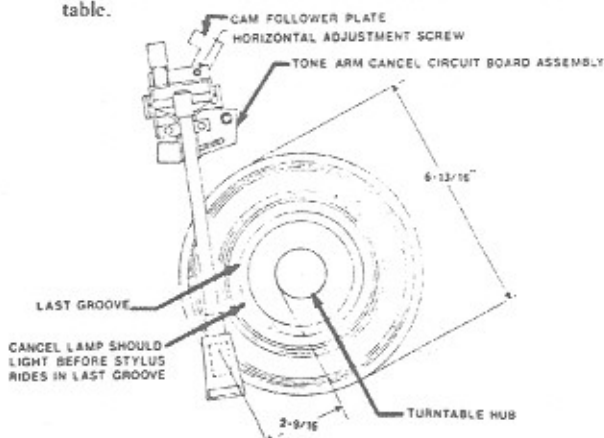


STYLUS HEIGHT ADJUSTMENT

2. Turn auto cancel screw until stylus holder is flush to 1/64 above turntable pad surface with tone arm in play position.

E. Set Stylus Setdown Position and Tone Arm Cutoff Switch

1. Place undersize (6-13/16 inch diameter) record on turntable.

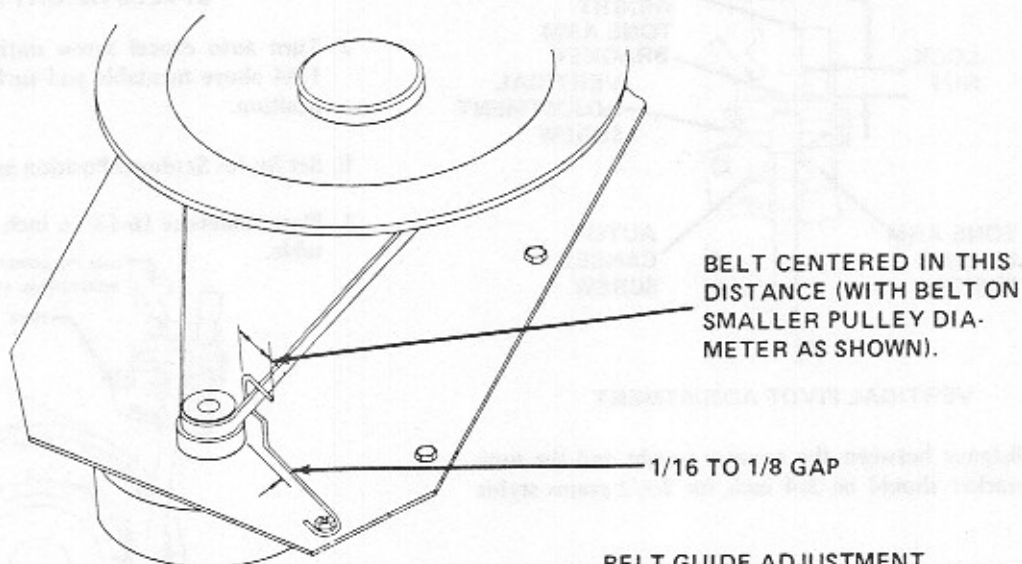


STYLUS AND TONE ARM ADJUSTMENTS

2. Operate transfer assembly to bring tone arm to play position.
3. Loosen horizontal adjustment screw.
4. While holding cam follower plate against tone arm cam, move tone arm, as required, until stylus is 2-9/16 inches from the edge of the turntable hub.
5. Tighten horizontal adjustment screw and check adjustment.
6. Disconnect microcomputer harness from mechanism control board (19 pin connector). (To prevent mechanism from cancelling.)
7. Loosen mounting screw on tone arm cancel circuit board assembly.
8. Position tone arm cancel circuit board assembly, as required, until reed switch is closed, as indicated by cancel lamp in mechanism control unit. This should happen before stylus enters "closed" record groove.

BELT GUIDE ADJUSTMENT

1. Loosen nut that fastens belt guide.
2. With belt on the smaller diameter of the pulley (60 Hz. position), adjust guide by moving it so that belt is centered (front to back) in the opening and so that a gap of $1/16$ to $1/8$ inch exists between the guide and the larger pulley diameter.
3. Tighten nut.
4. Belt may now be shifted to run on the larger pulley diameter (50 Hz. position), if required, without the need for readjusting the guide.



**NOTE: BELT SHOWN
IN 60Hz. POSITION**

**BELT GUIDE ADJUSTMENT
FOR BOTH 60 AND 50 Hz.**

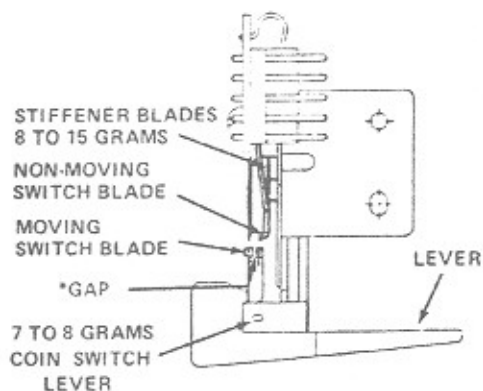
COIN SWITCH ADJUSTMENTS

OPERATION CHECK

1. Hold plastic coin switch lever in normal position and drop a coin through slug rejector.
2. When the coin comes to rest on the lever, release the lever slowly.
3. Check that the weight of the coin operates the lever enough to close the coin switch and allow the coin to fall free.
4. Repeat steps 1, 2 and 3 for other three levers.

CONTACT PRESSURE AND GAP

1. Check that each moving switch blade pushes against its lever with 7 to 8 grams force to hold lever against cushion. To adjust pressure, bend the blade near its mounting point.

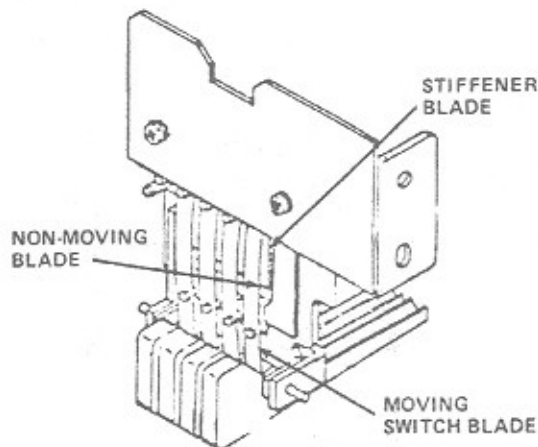


*0.030 to 0.035" - SWITCH WITH SHORT DOUBLE PADDLE

0.040 to 0.045" - SWITCHES WITH LONG PADDLE.

CONTACT PRESSURE AND GAP ADJUSTMENT

2. Check that each non-moving blade pushes against its stiffener blade with 8 to 15 grams force. To adjust pressure, bend the contact blade near its mounting point.

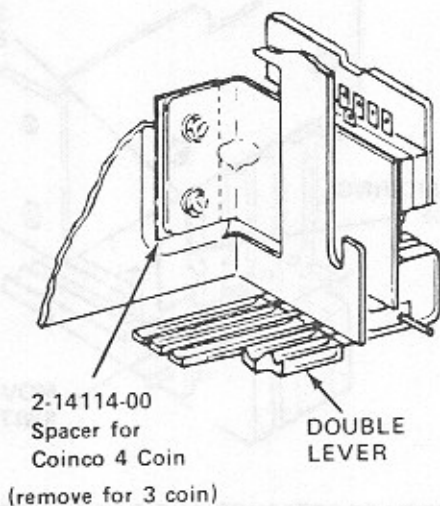


CONTACT PRESSURE AND GAP ADJUSTMENT

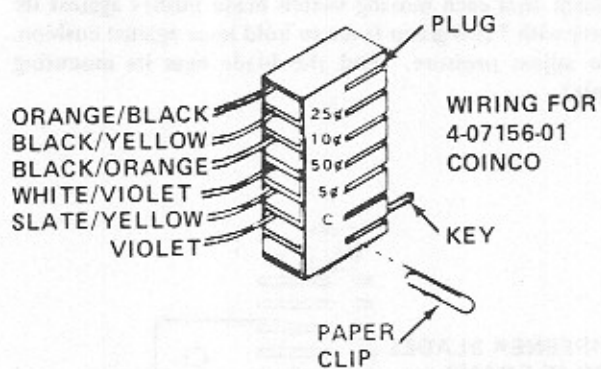
3. Check that contact gap at switch with short double paddle is 0.030 to 0.035". Check that contact gap for long paddle switches is 0.040 to 0.045 inch.

FOUR PRICE COIN MECHANISMS

NOTE: Coin switch wiring in edge connector must be changed for \$ coin rejectors. To interchange W/V and O/B wires, use tip of paper clip as tool. Press side of contact to release holding tab. Wire and contact can be pulled out. Tab may need reforming before re-insertion into edge connector.



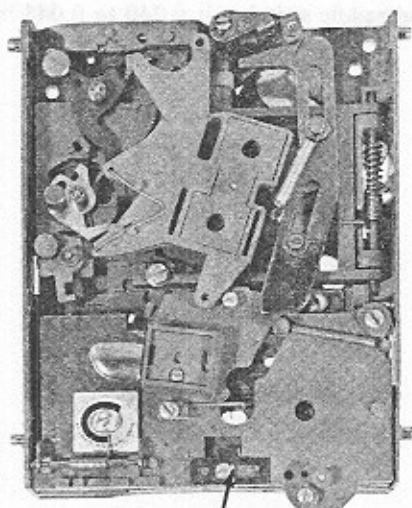
COIN SWITCH



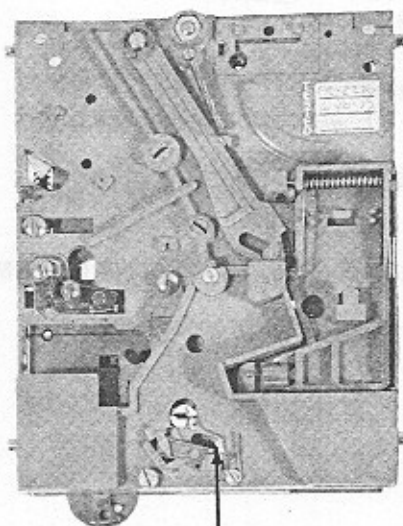
EDGE CONNECTOR

COIN ACCEPTORS 4 COIN

FRONT VIEW



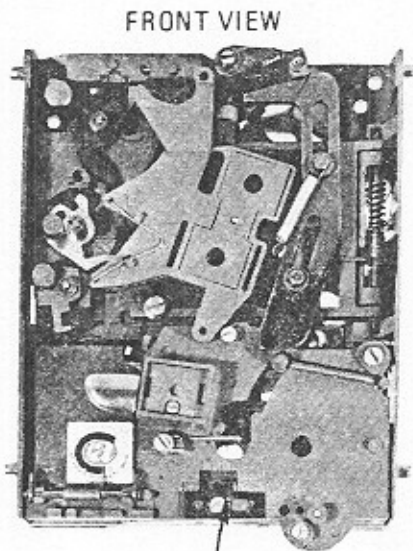
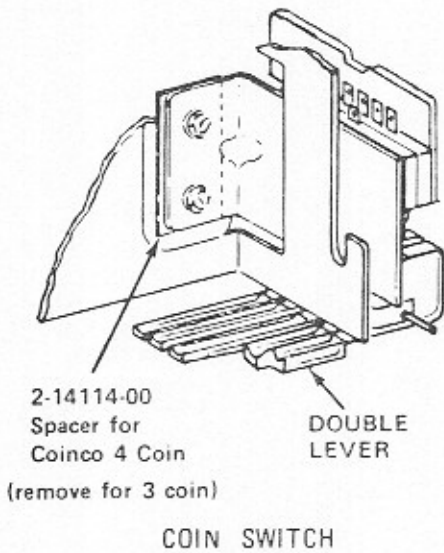
MOVE THIS BRACKET TO RIGHT TO REJECT NICKELS (OR JUST FAR ENOUGH TO LEFT TO ACCEPT NICKELS).



TO REJECT DIMES ADD COINCO No. 903915 BLOCK OUT WIRE.

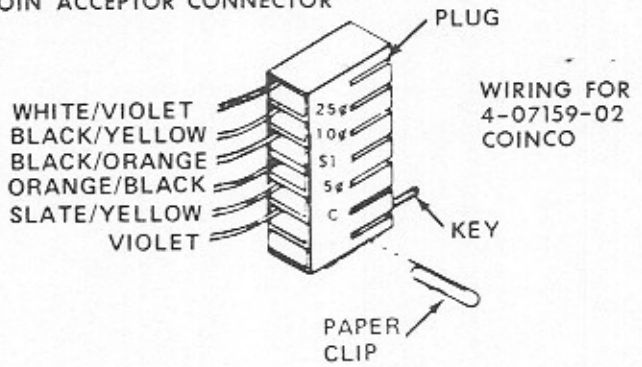
FOUR PRICE COIN MECHANISMS

NOTE: Coin switch wiring in connector must be changed for 50¢ coin rejectors. To interchange W/V and O/B wires, use tip of paper clip as tool. Press side of contact to release holding tab. Wire and contact can be pulled out. Tab may need reforming before re-insertion into connector.

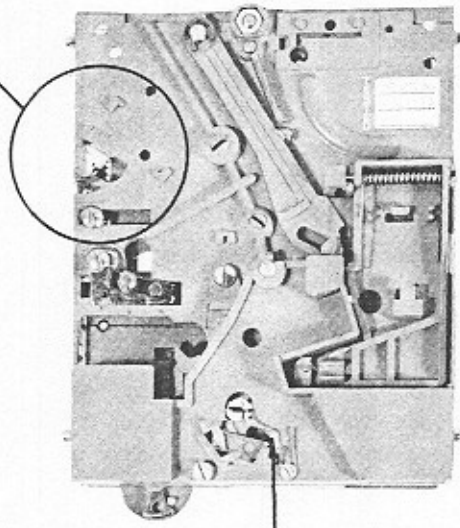
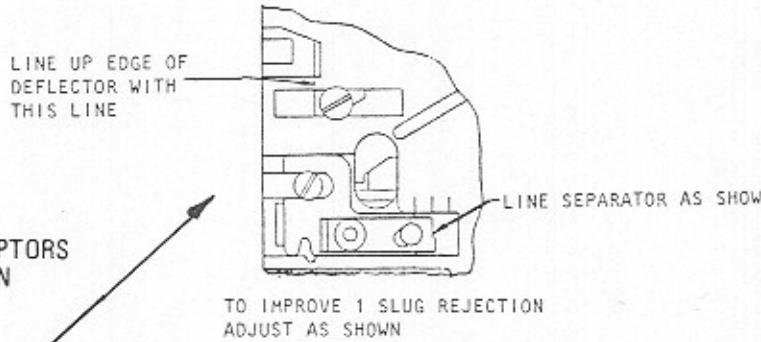


MOVE THIS BRACKET TO RIGHT TO REJECT NICKELS (OR JUST FAR ENOUGH TO LEFT TO ACCEPT NICKELS).

COIN ACCEPTOR CONNECTOR

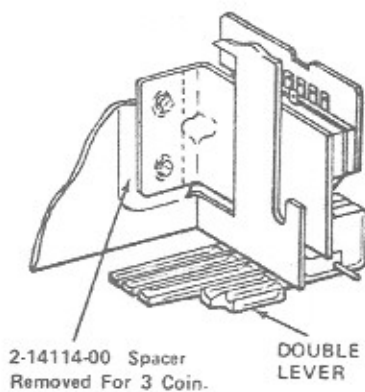


COIN ACCEPTORS 4 COIN

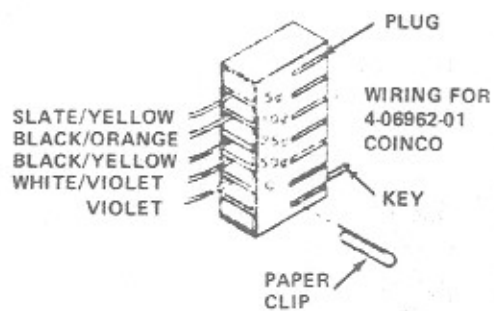


TO REJECT DIMES ADD COINCO
No. 903915 BLOCK OUT WIRE.

THREE PRICE COIN MECHANISMS



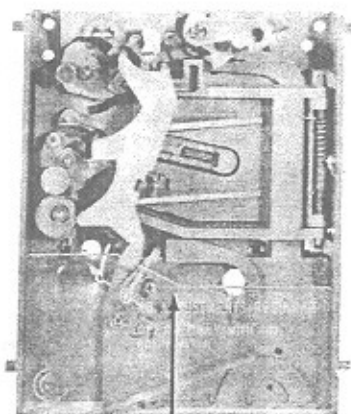
COIN SWITCH



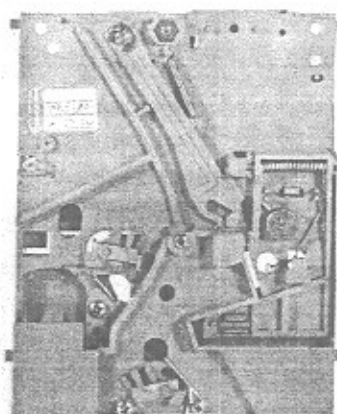
EDGE CONNECTOR

COIN ACCEPTORS
3 COIN

FRONT VIEW



REMOVE COVER AND DRIVE
No. 6-32 SCREW INTO BOSS AS
SHOWN TO REJECT NICKELS



TO REJECT DIMES ADD COINCO
No. 903915 BLOCK OUT WIRE.